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GB 2344020 A GB 2206265 A EP 0920165 A1
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(54) Abstract Title
Telephone advertising system

(57) A telephone advertising system 1 is provided which allows adverts to be played to a subscriber 13 during a set up procedure for a call between the subscriber and another party 3. The system comprises advertising means 15,17 for playing advertisements to the subscriber through the subscriber telephone and a controller for controlling the advertising means so that after a signal has been received indicating that the subscriber is placing or receiving a call, the advert is played to the subscriber prior to the call being established. The advertisement may be played prior to sending the caller's dialled number by first diverting the caller to an advertising station and then connecting the caller, or by playing it during the ringing period whilst waiting for the called party to answer the call. A single advertising station may serve the whole telephone network or stations may be provided at local exchanges in order to play advertisements to subscribers located in predetermined geographical locations. The an advert may be played to both parties to the call, each of which may hear a different advert. Adverts may be selected based upon stored user profiles. May be applied to landline and cellular telephone systems.

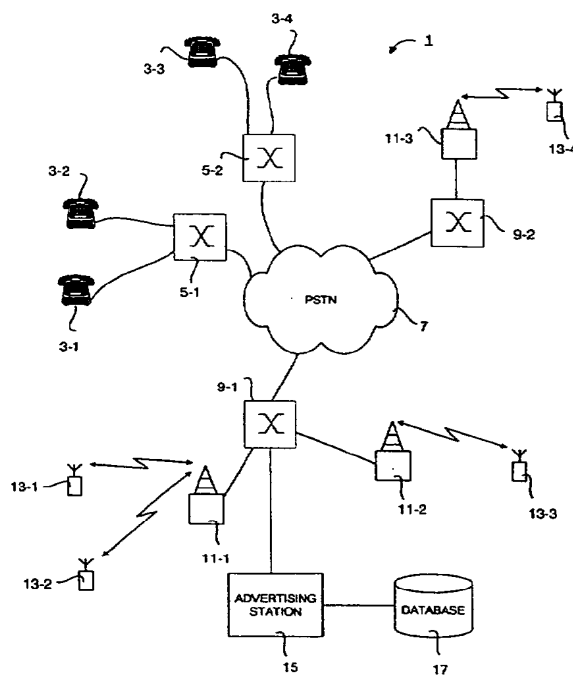


Fig. 1

GB 2 360 418 A

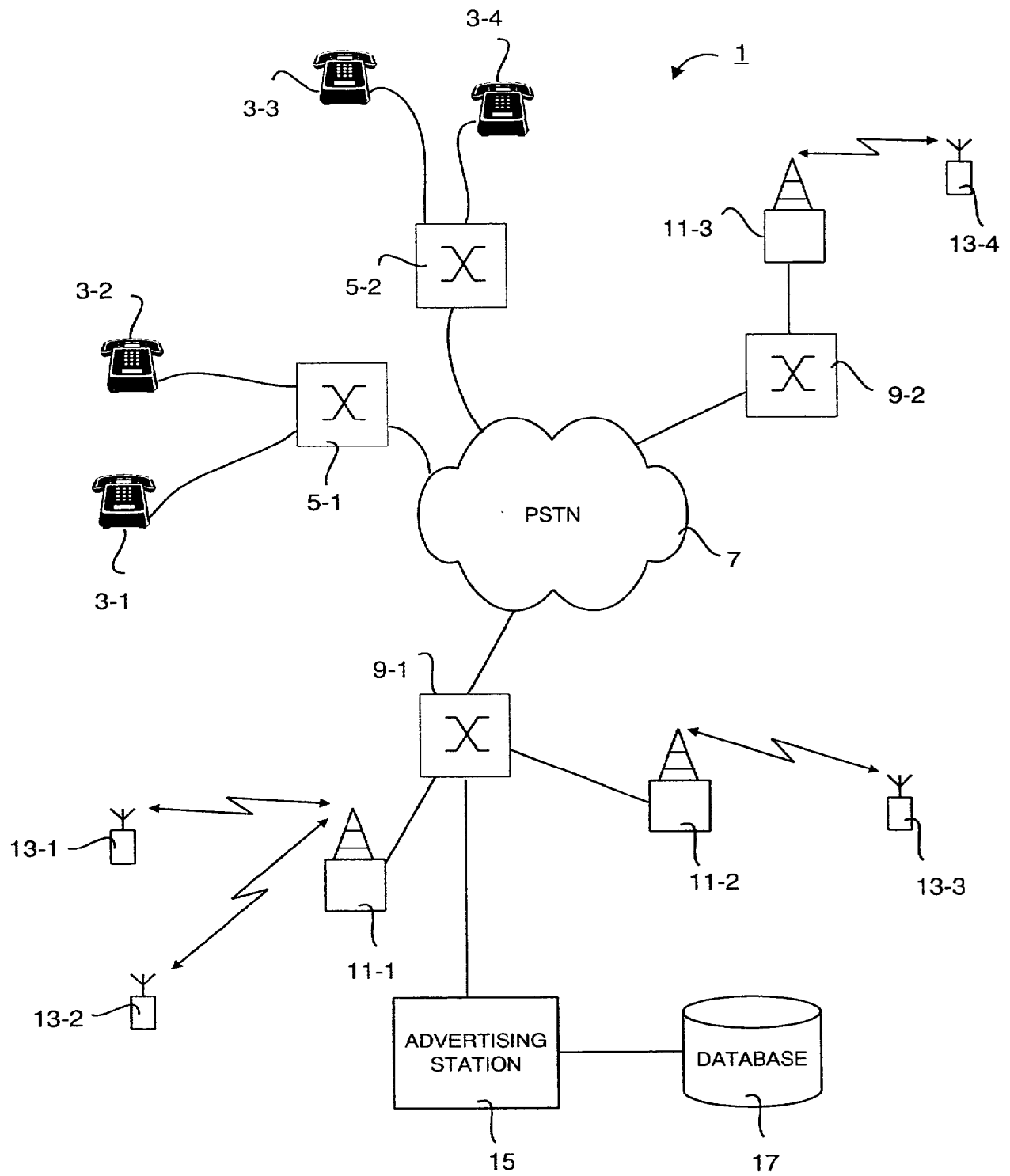


Fig. 1

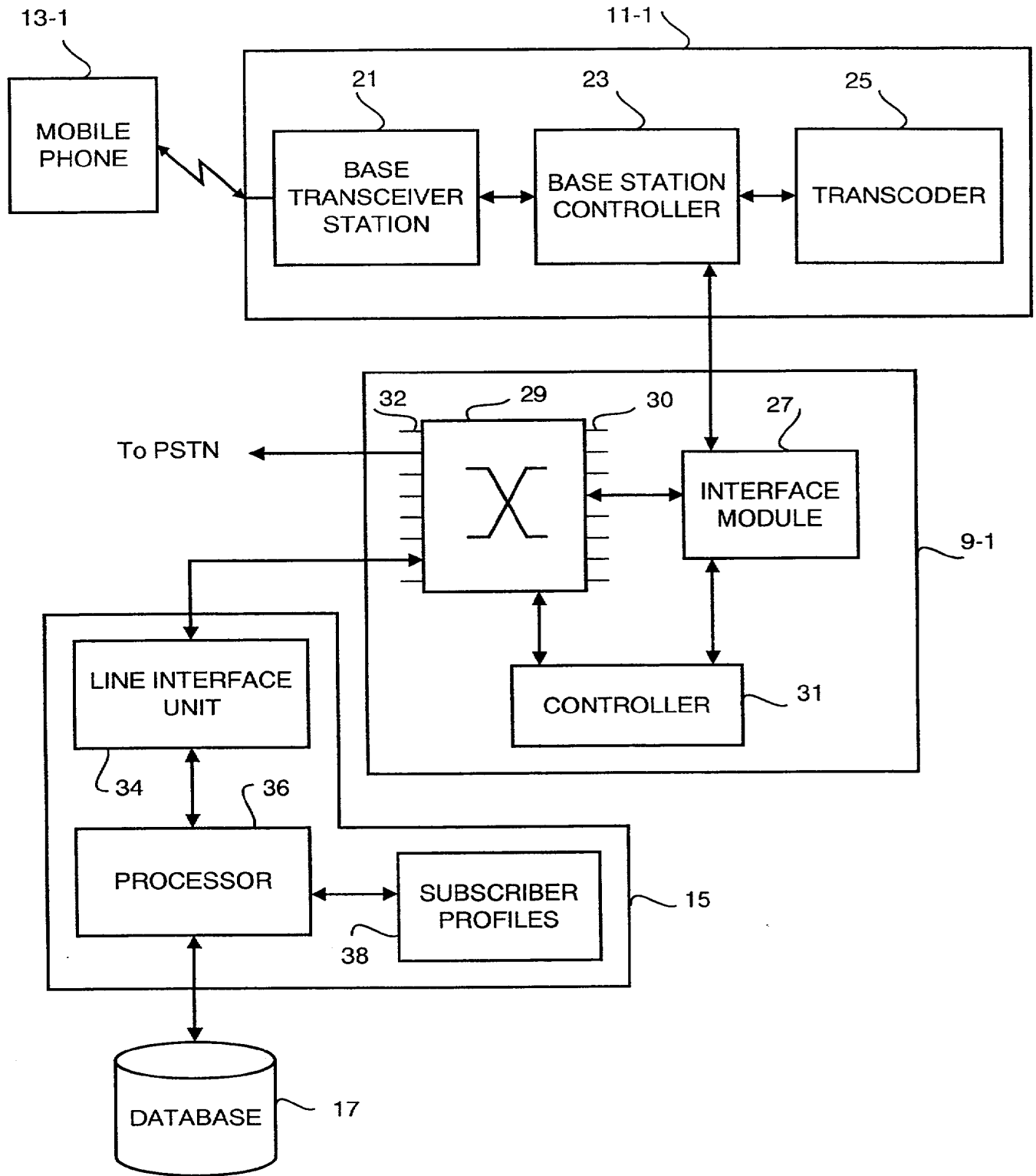


Fig. 2

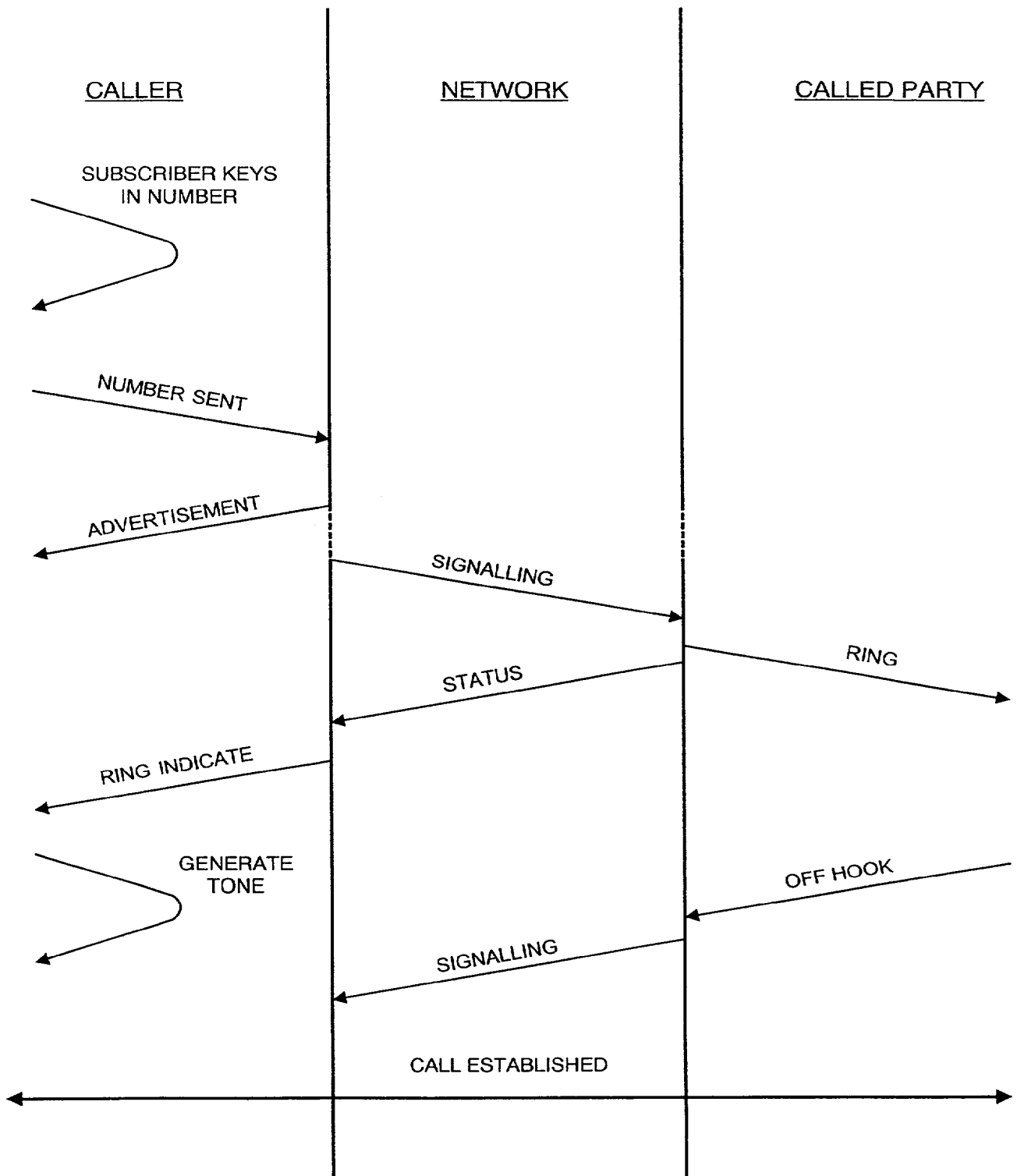


Fig. 3

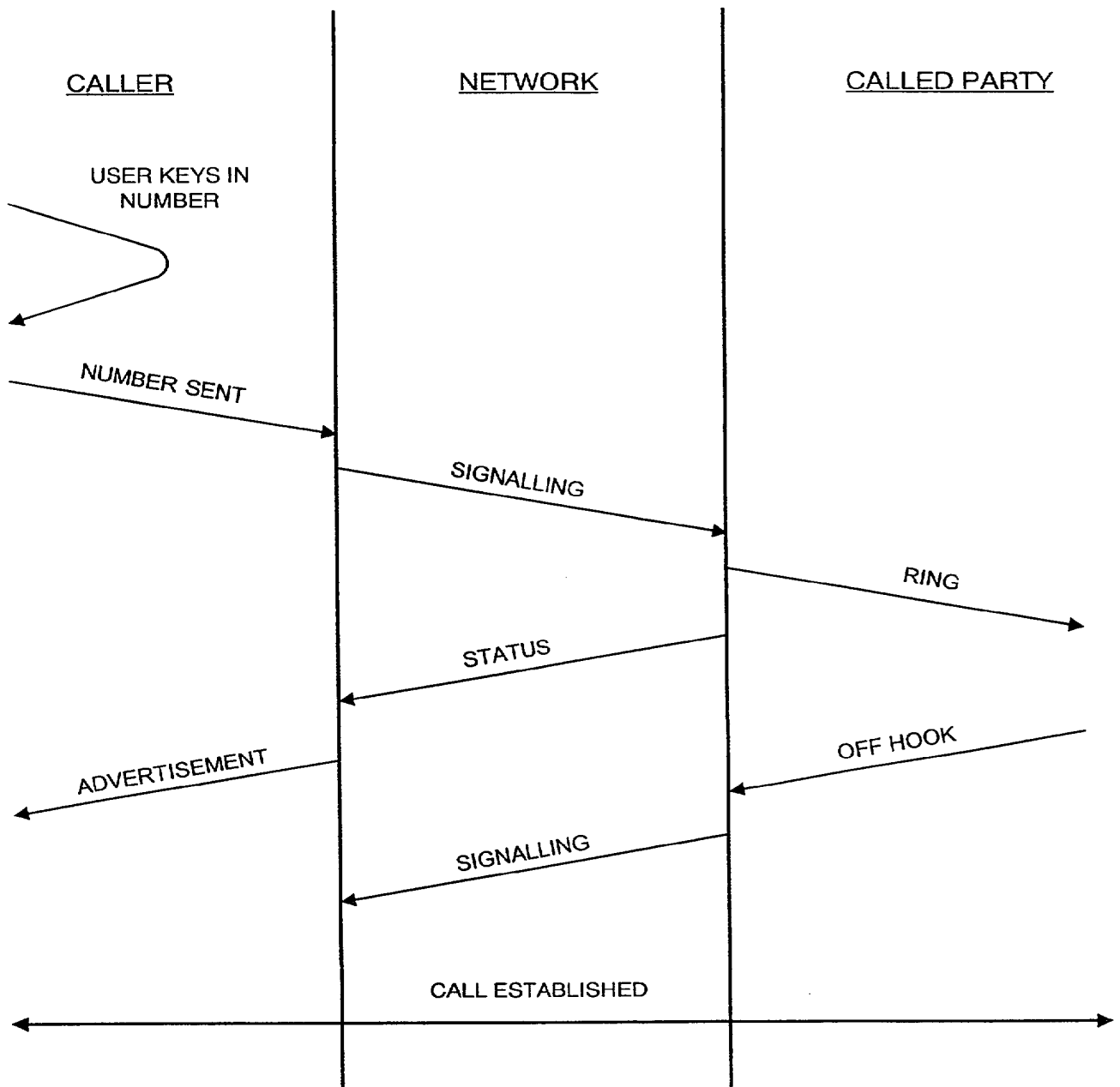


Fig. 4

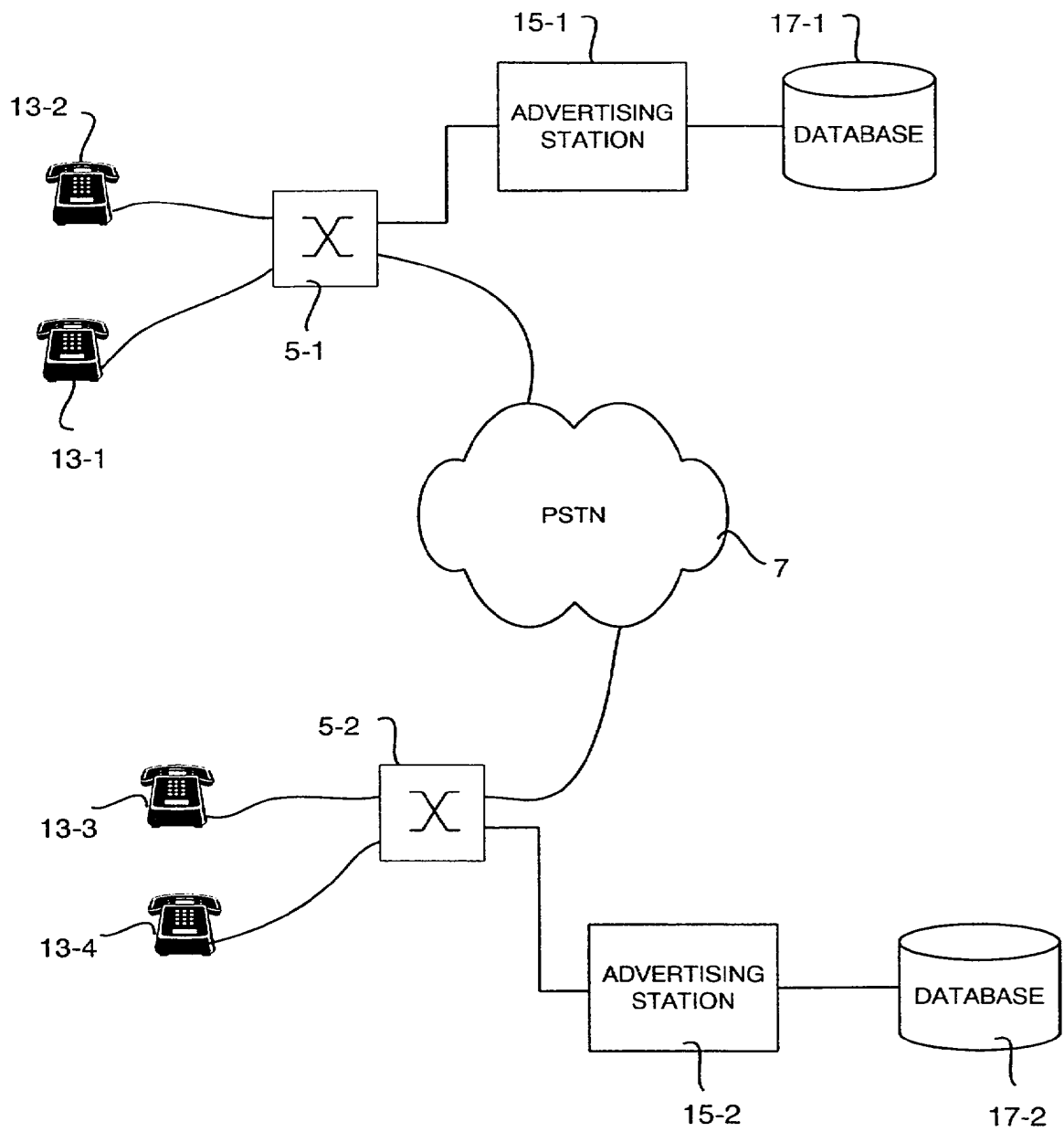


Fig. 5

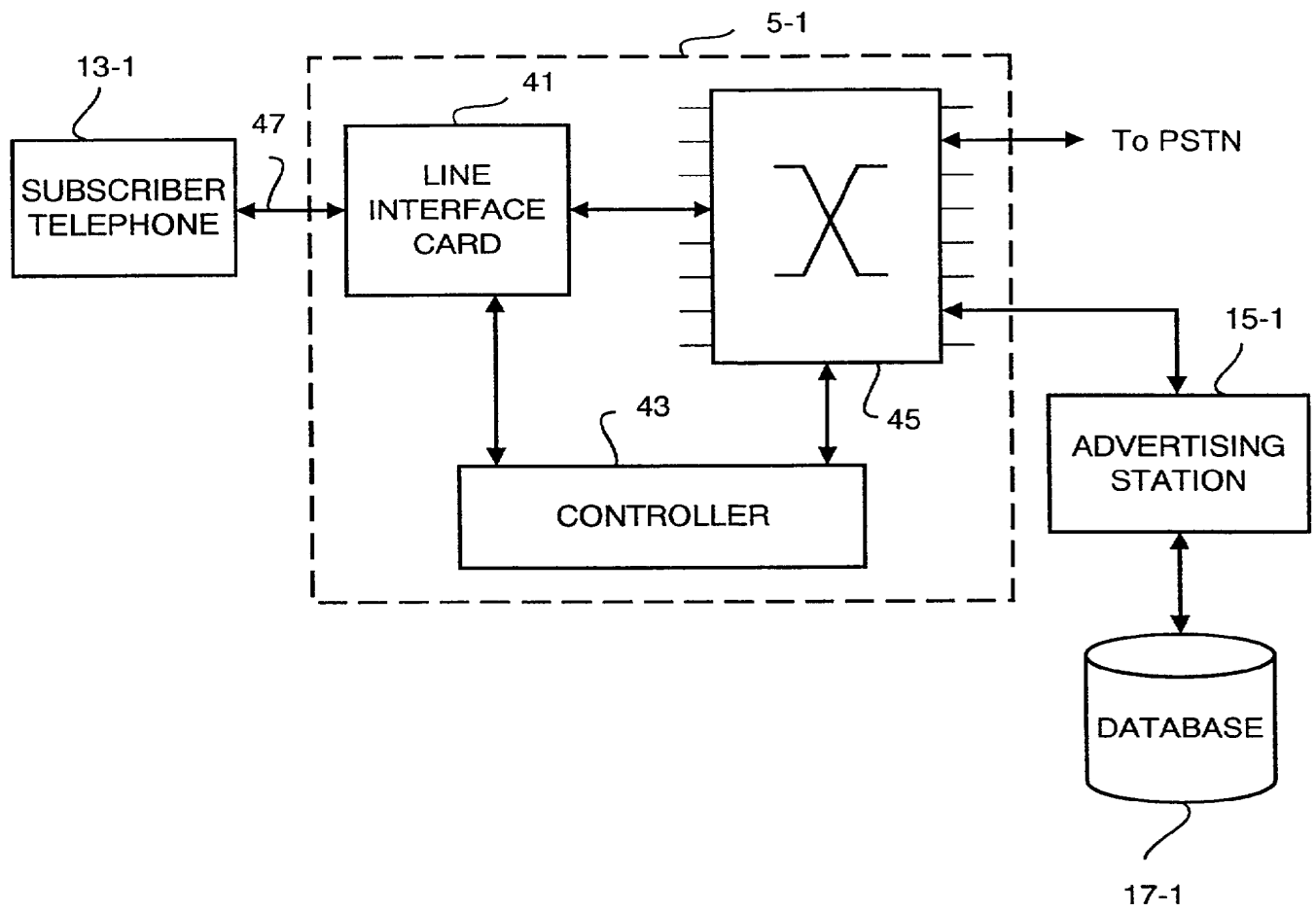


Fig. 6

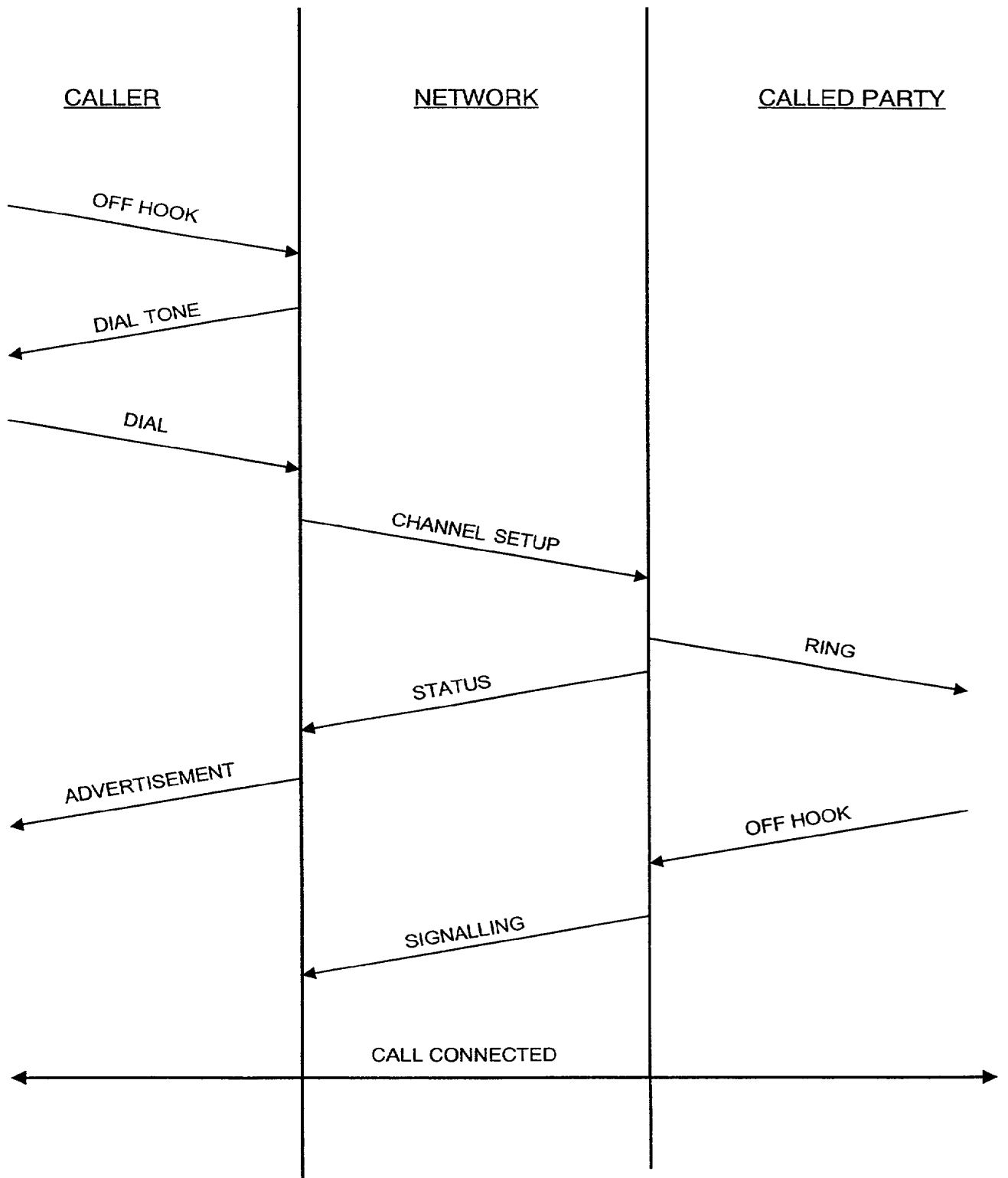


Fig. 7

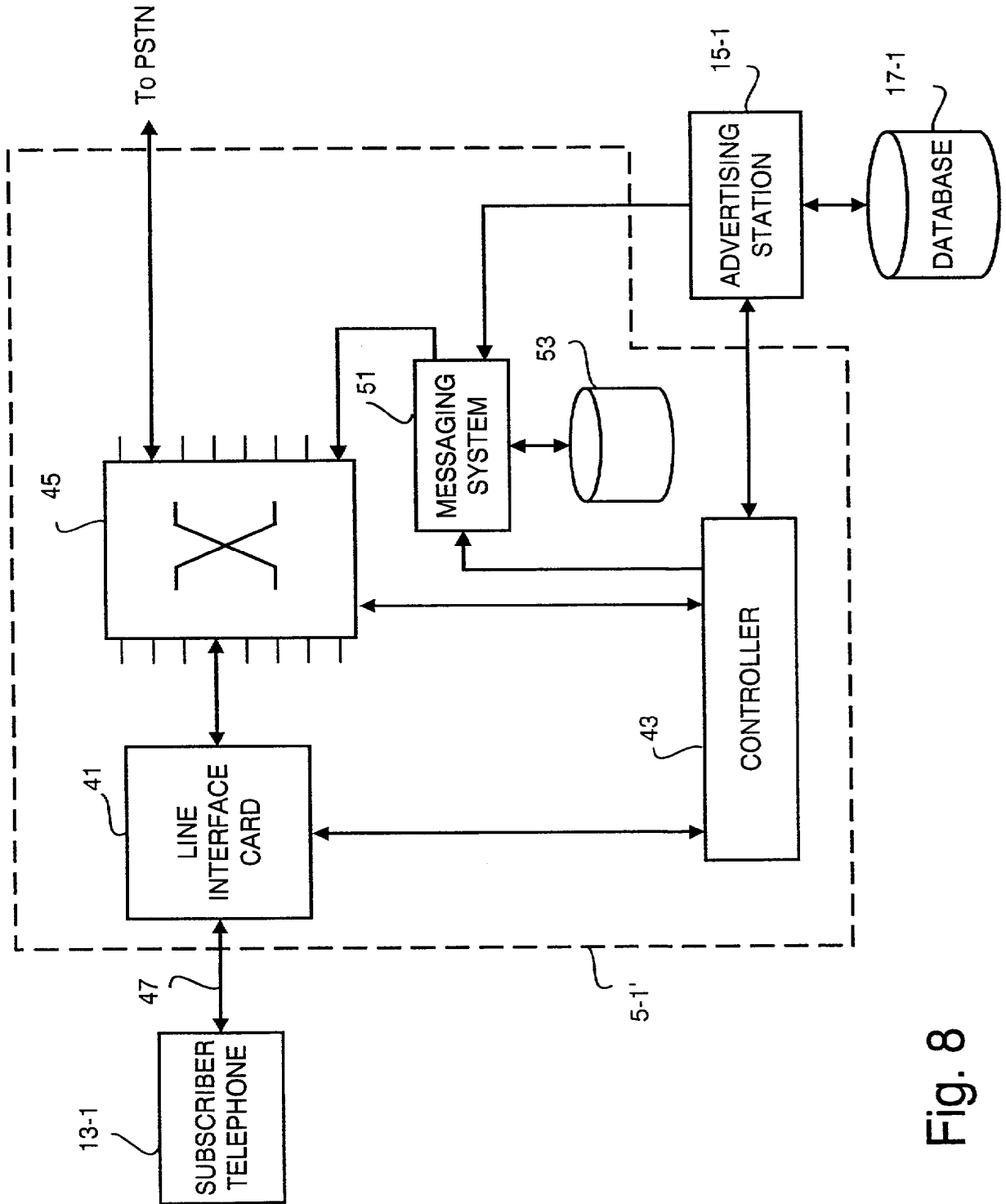


Fig. 8

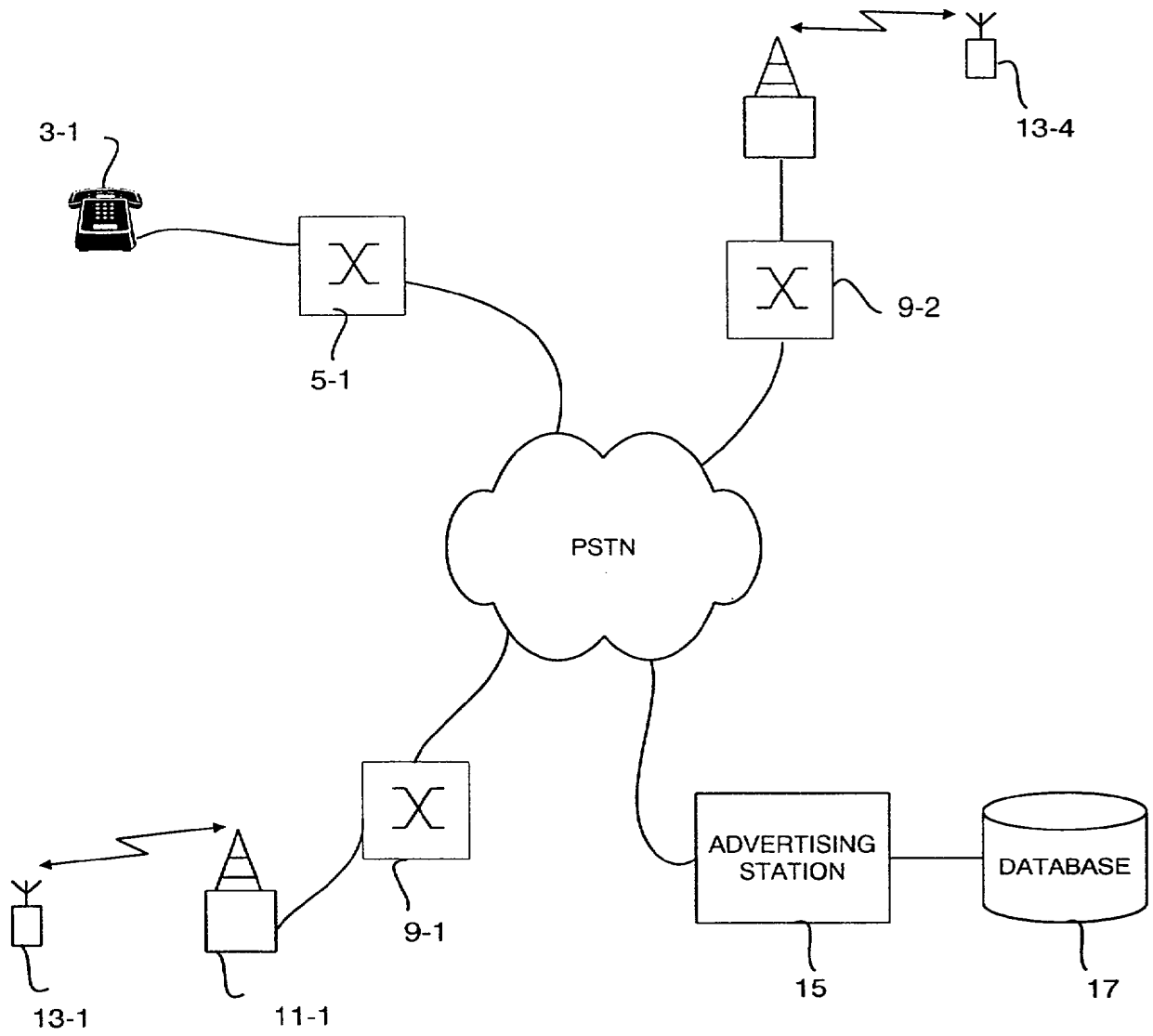


Fig. 9

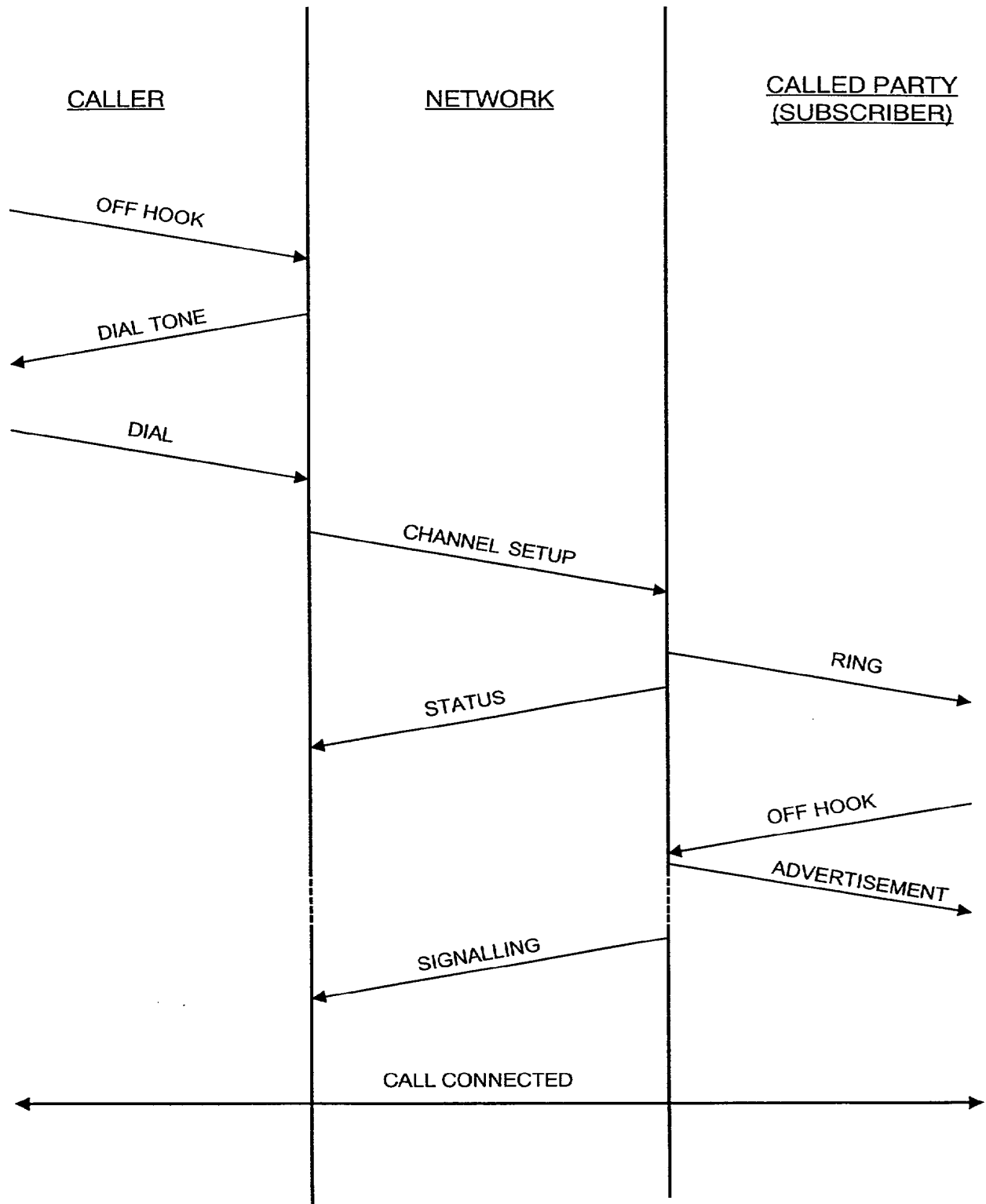


Fig. 10

TELEPHONE SYSTEM

The present invention relates to an apparatus and method for placing advertisements over a telephone network.

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Current trends in advertising have moved away from strategies which target wide audiences to those which target the individual. This allows the advertisements to be more effective because they can be tailored towards the individual. One proposal in this trend has been to play adverts over the telephone network. An example of this is a system which interrupts a subscriber's telephone call to play an advertisement. In return, the call is paid for by the advertiser. Whilst this proposal does give the advertisers the subscriber's attention during the advert, it can be annoying to both the calling party (i.e. the subscriber) and the called party, since both have to listen to the advertisement which can interrupt the telephone call at any time.

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One aim of the present invention is to provide an alternative system which plays advertisements over the telephone network.

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According to one aspect, the present invention provides a telephone advertising system which plays advertisements to one or more subscribers whilst the one or more

subscribers are placing or are receiving a call before the call is connected. This advertising system can be implemented in computer software or in computer hardware and run in conjunction with existing telephone networks, including both mobile and land based networks. The advertising system is also suited for use with more modern telephone network technology which uses packet switching to convey the voice data between the calling and called party.

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According to this aspect, the present invention provides a telephone advertising system comprising: advertising means for playing advertisements to a subscriber; means for receiving a signal indicating that the subscriber is placing or receiving a call; and control means for controlling said advertising means so that after receipt of said signal said control means causes said advertising means to play an advertisement to said subscriber prior to the call being connected.

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This aspect also provides a method of telephone advertising comprising the steps of receiving a signal indicating that a subscriber is placing or receiving a call; and playing an advertisement to the subscriber prior to the call being established.

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Exemplary embodiments of the present invention will now

be described with reference to the accompanying drawings in which:

5 Figure 1 is a schematic illustration of a telephone network comprising a number of land telephones and a number of mobile telephones;

10 Figure 2 is a block diagram illustrating the principal components of part of a mobile communication system which forms part of the network shown in Figure 1 and which includes an advertising station which operates to play adverts to the mobile phone users.

15 Figure 3 is a control timing diagram illustrating the protocol used during the connection of a call placed by one of the mobile users which allows the insertion of an advertisement prior to the setup procedure for placing a call;

20 Figure 4 is a control timing diagram illustrating the protocol used in an alternative embodiment which allows an advertisement to be played to a mobile user during the set up procedure for placing a call;

25 Figure 5 schematically illustrates a land based telephone network in which a plurality of land based user telephones are connected together through a public

switched telephone network and in which a number of the local exchanges are connected to an advertising station which operates to play advertisements to local users who place a call via the local exchange;

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Figure 6 is a block diagram which illustrates the way in which the advertising station is connected through to the subscribers telephone through the local exchange;

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Figure 7 is a timing control diagram illustrating the protocol employed in this embodiment which allows an advertisement to be played to a caller prior to the call being established;

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Figure 8 is a block diagram which illustrates the way in which the advertising station is connected through the local exchange to the subscriber telephone according to an alternative embodiment;

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Figure 9 schematically illustrates a public telephone network having a centralised advertising station which operates to provide advertisements to all subscribers in the network who place a call; and

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Figure 10 is a timing control diagram illustrating the protocol employed in an embodiment which plays an advert to a subscriber prior to the subscriber receiving an

incoming call.

Figure 1 schematically illustrates a telephone network 1 which comprises a number of user land line telephones 3-1, 3-2, 3-3 and 3-4, which are connected, via local exchanges 5-1 and 5-2 to the public switched telephone network (PSTN) 7. Also connected to the PSTN are a number of mobile switching centres (MSC) 9-1 and 9-2 which are linked to a number of base stations 11-1, 11-2 and 11-3. The base stations 11 are operable to receive and transmit communications to a number of mobile telephones 13-1 to 13-4 and the mobile switching centres 9 are operable to control connections between the base stations 11 and the PSTN 7. As shown in Figure 1, mobile switching centre 9-1 is also connected to an advertising station 15 which controls the selection and playing of advertisements from an advertisement database 17 to the mobile telephones 13-1, 13-2 and 13-3 which are in communication with the base stations 11-1 and 11-2.

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A brief description of the way in which the subscriber advertising system operates in this embodiment will now be given for a subscriber who places a call from mobile telephone 13-1 to land line telephone 3-1. A more detailed description of this example will then be given. When the subscriber wishes to place the call he first keys the number into the telephone and then transmits the

entire number to the base station 11-1. In response, the base station 11-1 forwards the number to the mobile switching centre 9-1 which immediately sets up a voice path between the mobile telephone 13-1 and the advertising station 15 via the base station 11-1. The advertising station 15 then plays a selected advertisement from the database 17 over the voice path to the subscriber at mobile telephone 13-1. After the advertisement ends, the mobile switching centre 9-1 breaks the voice path between the advertising station 15 and the mobile telephone 13-1 and initiates the connection process for connecting the subscriber to the land telephone 3-1 through the PSTN 7. In this embodiment, in return for playing the advert, part or all of the subscriber's call is paid for by the advertisers.

A more detailed description of this embodiment will now be given with reference to Figures 2 and 3. Figure 2 shows in more detail the components of the base station 11-1, the mobile switching centre 9-1 and the advertising station 15 which are used in this embodiment, to allow the advertising station 15 to play an advertisement to the subscriber at mobile telephone 13-1. As shown, the base station 11-1 has a base transceiver station 21, a base station controller 23 and a transcoder 25. The base transceiver station 21 contains all the necessary radio frequency components that provide the air interface for

the base station cell, which includes the antenna which transmits and receives the RF signals. The base station controller 23 controls the operational function of the base station 11. It also incorporates a digital switching matrix (not shown) which it uses to connect the radio channels in the air interface with the terrestrial circuits from the mobile switching centre 9-1. The transcoder 25 converts the speech or data output from the mobile switching centre (which are typically PCM signals), in to the form specified by the particular mobile network for transmission over the air interface.

The mobile switching centre 9-1 comprises an interface module 27, a digital switching matrix 29 and a controller 31. The interface module 27 is provided to pass voice data from the mobile telephone 13-1 to the digital switching matrix 29 and to allow base station controller 23 to be able to communicate directly with the mobile switching centre controller 31 on an appropriate control channel. This allows the mobile switching centre to control handover procedures and the like, as the mobile telephone 13-1 moves from one base station cell to another. The controller 31 also controls the digital switching matrix 29 so as to control connections between input terminals 30 (which connect, through a base station to a mobile telephone) and output terminals 32 (which connect either to the PSTN 7 or to the advertising

station 15) of the digital switching matrix 29. Therefore, the controller 31 can connect the advertising station 15 through the digital switching matrix 29 to any of the mobile phones serviced by the mobile switching centre 9-1.

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The advertising station 15 comprises a line interface unit 34, a processor 36 and a set of stored subscriber profiles 38. The line interface unit is operable to recover the data transmitted by the controller 31 through the digital switching matrix 29 and is operable to convert the acoustic advertising signal into a suitable form for transmission to the mobile switching centre 9-1. In this embodiment, the line interface unit converts the acoustic advertising signals into PCM signals for transmission to the mobile switching centre 9-1. The processor 36 is operable to receive the data transmitted to it from the controller 31 and to retrieve an appropriate advert from the advert data base 17. In this embodiment, the appropriate advert for the subscriber is determined with reference to a set of stored subscriber profiles 38, which store personal details of the subscribers to the advertising system.

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Referring now to Figure 3, the control timing of this embodiment will now be described. Initially, the subscriber keys in the number of the party to be called.

Once the subscriber has entered all the numbers, he presses the send key (not shown) on the mobile telephone 13-1. The number is then transmitted over the air interface to the base station 11-1. The base station controller 23 then forwards the number, via the interface module 27, to the controller 31 in the mobile switching centre 9-1. In response, the controller 31 stores the number and sends a message to the advertising station 15, via the digital switching matrix 29, informing it that the subscriber wishes to place a call. At the same time, it sets up a voice path between the mobile telephone 13-1 and the advertising station 15 through the digital switching matrix 29. After receiving the message from the controller 31, the processor 36 in the advertising station 15 refers to the profile for the subscriber making the call, in order to identify an appropriate advertisement to play to that subscriber. The appropriate advertisement is then retrieved from the database 17 and played to the subscriber at mobile phone 13-1 over the voice channel which has been set up.

After a predetermined period of time (to allow the complete playing of the advert), which in this embodiment is five seconds, the controller 31 breaks the voice path between the advertising station 15 and the mobile telephone 13-1 and initiates the routing of the call via the digital switching matrix 29 and the PSTN 7 to the

land line telephone 3-1. In response to receiving the signalling signals from the mobile switching centre 9-1, the local exchange 5-1 checks to determine whether or not the telephone 3-1 is free. Based on this determination, status information is transmitted back to the mobile switching centre 9-1. If the local exchange 5-1 determines that the telephone 3-1 is free, then it applies a ring current to the telephone line which causes the telephone 3-1 to ring and the mobile switching centre 9-1 sends an appropriate control signal to the mobile telephone 13-1, via the base station 11-1, which causes the mobile telephone 13-1 to generate the ring tone. When the called party lifts the receiver to go off hook, appropriate signalling information is transmitted between the local exchange 5-1 and the mobile switching centre 9-1 and the call is finally established or connected.

Figure 4 illustrates the control timing for an alternative embodiment in which the architecture of the network is the same as in the first embodiment but the timing at which the advertisement is played to the user is different. In particular, in this embodiment, the mobile switching centre 9-1 is arranged to set up a voice path between the advertising station 15 and the mobile phone 13-1 after it has received confirmation that the called party is not busy. At this time, rather than sending a ring indicate signal from the base station to

the mobile telephone 13-1, the advertisement is played to the subscriber through the switching matrix 29 and the base station 11. Once the called party lifts the receiver off hook and this event has been signalled through the network to the mobile switching centre 9-1, the MSC controls the digital switching matrix 29 so as to break the voice path between the advertising station 15 and the mobile telephone 13-1 and to set up a voice path between the mobile telephone 13-1 and the telephone 3-1. One disadvantage with this embodiment is that the time available for playing the advertisement is governed by the length of time it takes for the called party to lift the receiver off the hook. Therefore, a full advert may not be played to the subscriber and, in this case, the call is not paid for by the advertiser.

In the above embodiments, the advertising station has been associated with part of a mobile communications network. As those skilled in the art will appreciate, the advertising station 15 may be associated with a land line telephone network, such as the one illustrated in Figure 5. As shown, in this embodiment, each of the local exchanges 5-1 and 5-2 is connected to an associated advertising station 15-1 and 15-2 and database 17-1 and 17-2. In this embodiment, the adverts in each of the databases 17-1 and 17-2 include a number of local adverts for local traders as well as global adverts which are

common to all the databases 17.

The operation of this embodiment will now be described with reference to Figures 6 and 7. Figure 6 shows in more detail the way in which advertising station 15-1 is connected to the subscriber telephone 13-1 via the local exchange 5-1 and Figure 7 illustrates the timing control diagram of this embodiment. As shown in Figure 6, the local exchange comprises a line interface card 41, a controller 43 and a digital switching matrix 45. In operation, when the subscriber lifts the handset and goes off hook, this is detected by the line interface card 41 in the local exchange 5-1 and a dial tone is sent to the telephone 13-1 over the telephone line 47. The user then dials the number and, as he does so, the number is transmitted down the telephone line 47 through the line interface card 41 to the controller 43. After the user has dialled the last digit, the controller 43 initiates a channel set up procedure which tries to establish a connection to the called party via the digital switching matrix 45 and, if necessary, the PSTN 7. In a similar manner to the previous embodiments, the exchange which is local to the called party then determines whether or not the called party is free. If they are, then the called party's local exchange applies the ringing signals to cause the called party's telephone to ring and signals back to the calling party's local exchange 5-1 that a

connection can be made. When the controller 43 receives this status information back via the digital switching matrix 5-1, it signals the advertising station 15-1, via the digital switching matrix 45, that the subscriber
5 associated with the telephone 13-1 wishes to place a call and that a voice path has been established between the advertising station 15-1 and the subscriber telephone 13-1 through the digital switching matrix 45. In response, the advertising station 15-1 retrieves an advert from the
10 database 17-1 and plays it to the subscriber at telephone 13-1. Once the called party lifts the receiver and goes off hook, the local exchange of the called party signals the local exchange 5-1 which, in response, breaks the voice connection between the advertising station 15-1 and
15 the subscriber telephone 13-1 and connects the subscriber telephone 13-1 to the called party.

As in the second embodiment described above, this embodiment suffers from the disadvantage that the length
20 of time the advertisement is played depends on the length of time taken for the called party to lift the receiver off hook. It would, of course, be possible to operate the land based system in a similar manner to the first embodiment described above. However, this is not the
25 preferred embodiment because it would require the reconfiguration or reprogramming of all the local exchanges which are currently used in the existing

telephone network.

As those skilled in the art will appreciate, the above
embodiments illustrate the way in which an advert can be
5 played to a subscriber when the subscriber places a call
and before the call is actually connected. A number of
modifications which can be made to the above embodiments
will now be described.

10 In the above embodiments, the advertising system was
connected to the digital switching matrix at a single
connection point. As those skilled in the art will
appreciate, in a practical implementation, where a single
advertising station will have to play different adverts
15 to a number of different subscribers simultaneously, the
advertising station will be connected to a number of
output terminals of the digital switching matrix.

In the first two embodiments, where the advertising
20 station is associated with part of a mobile
communications system, it was connected to the mobile
switching centre. In an alternative embodiment, the
advertising station may be connected directly to the base
station through the digital switching matrix in the base
25 station which is used to control communications between
the terrestrial communication links to the mobile
switching centre and the channels set up for voice

communications between the base station and the subscriber telephones.

In the first embodiment, the procedure for setting up the call was delayed in order to allow the playing of an advert to the subscriber, after which the voice path between the advertising station and the subscriber telephone was cut off and the call set up procedure continued in the conventional way. As those skilled in the art will appreciate, the first embodiment can be modified so that the advertising station 50-1 can continue playing adverts to the subscriber until the called party goes off hook. In this way, two or even three adverts may be played to the subscriber before the call is connected.

In the third embodiment described above, the advert is played to the subscriber as soon as the subscriber's local exchange receives the status information back from the remote exchange. This can cause a problem if the subscriber also connects a modem to the same telephone line, since the modem responds to the ringing signal which is normally generated by the local exchange. Therefore, in a preferred land based embodiment, the playing of the advert is delayed until after a short burst of ringing signal has been received by the subscriber telephone. Alternatively, a manually operable

or automatic control switch may be provided which is associated with the subscriber telephone and which can be used to activate or de-activate the advertising service, so that the subscriber can cause the telephone system to operate in a normal manner when he wishes to use the modem.

In the third embodiment described above, the advertising station was directly connected to the digital switching matrix located within the local exchange. Figure 8 shows an alternative arrangement in which the advertising station is connected to the digital switching matrix 45 through a messaging system 51. The messaging system is used to play predetermined voice messages to normal telephone users to indicate, for example, that although the called party is busy, the called party knows that there is another call waiting. These prerecorded voice messages are stored in the database 53. As shown, in this embodiment, the controller 43 communicates directly with the advertising station 15-1 in order to inform the advertising station that a subscriber is placing a call and, in response, the advertising station outputs the advert to the messaging system 51 which in turn outputs the advert to the digital switching matrix 45.

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In the above embodiments, one or more advertising stations were provided at a local exchange or at a mobile

switching centre. As those skilled in the art will appreciate, various other configurations can be used. For example, as illustrated in Figure 9, a single global advertising station 15 may be provided which can be
5 accessed by all the mobile switching centres 9 and the local exchanges 5. However, a distributed network of advertising stations is preferred, since this allows a number of smaller local databases to be used, each of which may store a number of adverts for local traders and
10 this also reduces the traffic carried over the PSTN.

In an alternative arrangement to the third embodiment described above, a user unit may be provided at the subscriber telephone 3-1 which sits between the telephone
15 and the telephone line and which is operable to receive an appropriate advert from the advertising station prior to the subscriber making the call. This user unit could then operate (i) to receive the digits dialled by the telephone (whilst preventing them from being transmitted
20 through to the local exchange); (ii) to play one or more adverts to the subscriber after all the digits have been dialled; and (iii) to transmit the dialled number to the local exchange 5-1 after the advert or adverts have been played. The remaining call set up procedure would then
25 proceed in the usual way. After the call has finished, the user unit can dial into the advertising station and retrieve one or more further adverts for playing to the

subscriber the next time the subscriber places a call. As those skilled in the art will appreciate, such an embodiment has the advantage that it requires no modification to the existing telecommunications network, only the addition of the advertising station which can be connected to the network via any local exchange.

In the above embodiments, the advertising station selected an advert to be played to the subscriber who is placing the call. This selection was carried out with reference to a subscriber profile which the advertising station stores. As those skilled in the art will appreciate, this is not essential. A random selection of adverts from the database 17 may be played instead.

A description has been given above of a mobile and a land based telephone system which allows adverts to be played to subscribers during the call set up procedure. As those skilled in the art will appreciate, this advertising system can also be used in telephone systems which use the Internet as the medium for transporting the voice data between the subscriber and the called party. In fact, the advertising system can be implemented more readily in such a system, because of the packet nature of the traffic carried over the Internet.

In the above embodiments, the advert was played to the

subscriber after the subscriber dials the number of the party he wishes to call. In an alternative embodiment, the advert may be played to the subscriber as soon as the subscriber lifts the handset to place the call.

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In the above embodiments, the advert was played to the subscriber through the subscriber's telephone. As those skilled in the art will appreciate, the advert may be played over a speaker system which is associated with the subscriber telephone.

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A telephone advertising system has been described above which plays adverts to a subscriber when the subscriber wishes to place a call. In an alternative embodiment, the advertising system may be arranged to play an advert to the subscriber when a calling party wishes to place a call to the subscriber. In such an embodiment, when the subscriber lifts the handset to receive the call, the advertising system plays an advert to the subscriber's telephone through the subscriber's local exchange. In order to allow time for the advert to play, the off-hook acknowledgement which is sent to the calling party by the subscriber's local exchange is delayed for a predetermined amount of time. A suitable control protocol for such an embodiment is shown in Figure 10.

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Whilst in the above embodiments, the elements of the

advertising system have been shown as hardware blocks, it will be apparent to those skilled in the art that most of the functional blocks described above will be implemented in computer software. The software for configuring an existing telephone network to operate in accordance with the present invention may be obtainable on a recording medium, such as a floppy disc or CD-ROM or may be downloadable as a signal from, for example, the Internet.

A number of embodiments and modifications have been described above. As those skilled in the art will appreciate, there are many other embodiments and modifications which will form part of the present invention.

CLAIMS:

1. A telephone advertising system comprising:
 advertising means for playing advertisements to a subscriber through subscriber telephone equipment;
 means for receiving a signal indicating that the subscriber is placing or receiving a call; and
 control means, responsive to said receiving means, for controlling said advertising means so that after receipt of said signal said control means causes said advertising means to play an advertisement to said subscriber through said subscriber telephone equipment prior to the call being established.

2. A system according to claim 1, wherein said advertising means comprises a database of advertisements and means for selecting an advertisement to be played from said database.

3. A system according to claim 2, further comprising a set of subscriber profiles and wherein said selecting means is operable to select an advertisement from the database in dependence upon the subscriber profile for the subscriber to which the advertisement is to be played.

4. A system according to claim 1, 2 or 3, wherein said

advertising means is operable to play the advertisement independent of the status of the called party.

5. A system according to any preceding claim, wherein said advertising means comprises switch means operable for connecting the subscriber telephone equipment to said advertising means or to a telephone network for connection to a called or calling party and wherein said control means is operable to control said advertising means by controlling said switch means.

6. A system according to any preceding claim, wherein said receiving means is operable to receive said signal from a telephone network to which a calling or called party is connected.

7. A system according to any of claims 1 to 5, wherein said receiving means is operable to receive said signal from said subscriber telephone equipment.

8. A system according to claim 7, wherein said signal is representative of the telephone number of a party to be called.

9. A system according to any preceding claim, wherein said receiving means is operable to receive a signal indicating that the subscriber is placing a call.

10. A system according to any preceding claim, wherein said advertising means is operable for playing advertisements to a plurality of subscribers.

11. A system according to claim 10, wherein said advertising means is operable to play a respective different advertisement to each subscriber.

12. A method of telephone advertising comprising the steps of:

receiving a signal indicating that a subscriber is placing or receiving a call; and

playing an advertisement to the subscriber through subscriber telephone equipment prior to the call being established.

13. A method according to claim 12, wherein a plurality of advertisements are stored in a database and wherein the method further comprises the step of selecting an advertisement to be played from the database.

14. A method according to claim 13, wherein a plurality of subscriber profiles are stored and wherein said selecting step selects the advertisement from the database in dependence upon the subscriber profile for the subscriber to which the advertisement is to be played.

15. A method according to any of claims 12 to 14, wherein said advertisement is played independent of the status of the called party.

16. A method according to any of claims 12 to 15, wherein said advertisement is played to said subscriber through a switch which can connect the subscriber telephone equipment to a telephone network for connection to a called or calling party.

17. A method according to any of claims 12 to 16, wherein said receiving step receives said signal from a telephone network to which a calling or called party is connected.

18. A method according to any of claims 12 to 16, wherein said receiving step receives said signal from said subscriber telephone equipment.

19. A method according to claim 18, wherein said signal is representative of the telephone number of a party to be called.

20. A method according to any of claims 12 to 19, wherein said receiving step receives a signal indicating that the subscriber is placing a call.

21. A method according to any of claims 12 to 20, wherein said playing step is operable to play an advertisement to a plurality of subscribers.

22. A method according to claim 21, wherein said playing step is operable to play a respective different advertisement to each subscriber that is placing or receiving a call prior to the respective calls being connected.

23. A storage medium storing processor implementable instructions for controlling a processor to implement the method of any of claims 12 to 22.

24. Processor implementable instructions for controlling a processor to implement the method of any of claims 12 to 22.

25. A telephone system comprising a plurality of telephones including one or more subscriber telephones and a telephone network operable for connecting one of the plurality of telephones to at least one of the other telephones and an advertising system according to any of claims 1 to 11.

26. A telephone system according to claim 25, wherein said advertising system is operable to play

advertisements to all subscriber telephone equipment connected to the telephone network.

27. A telephone system according to claim 25 or 26, wherein said advertising station is operable to play advertisements to subscribers located in a predetermined geographical locality within said telephone network.

28. A telephone system according to any preceding claim, comprising a plurality of advertising stations according to any of claims 1 to 11, each associated with a different geographical locality within said telephone network.

29. A telephone system according to any of claims 25 to 28, wherein said network comprises a land based telephone network and wherein at least one of said subscriber telephones is a land based telephone.

30. A telephone system according to any of claims 25 to 29, wherein said network comprises a mobile telephone network and wherein at least one of said subscriber telephones comprises a mobile telephone.

31. A telephone system comprising:

a plurality of telephones at least one of which is a subscriber telephone;

a telephone network operable for connecting the subscriber telephone with at least one of the other telephones;

advertising means for playing advertisements to the subscriber through the subscriber telephone;

means for receiving a signal indicating that the subscriber is placing or receiving a call; and

control means responsive to said receiving means for controlling said advertising means so that after receipt of said signal, said control means causes said advertising means to play an advertisement to said subscriber through said subscriber telephone prior to the call being connected.

32. A telephone advertising method or apparatus substantially as described herein with reference to or as shown in the accompanying drawings.



INVESTOR IN PEOPLE

Application No: GB 9920889.4
Claims searched: 1 to 31

Examiner: Jared Stokes
Date of search: 12 July 2001

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
 UK Cl (Ed.S): H4K (KF42)
 Int Cl (Ed.7): H04M (3/487)
 Other: On-Line - EPODOC, JAPIO, WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X,P	GB 2 344 020 A (Butterworth) See page 1 line23-page 6 line 2	1,2,4-9, 12,13, 15-20,25, 27-29,31
X	GB 2 206 265 A (AT&T) See page 3 line 13-page 7 line 6	1-10, 12-21, 23-27,29, 31
X	EP 0 920 165 A1 (Bonanno et al.) See whole document	1,2,6-10, 12,13, 17-21, 23-26, 29,31
X,Y	WO 98/36585 A2 (Northern) See page 4 line 4-page 10 line 19	X: 1-9, 12-20, 23-27, 29-31 Y: 10,11, 21,22,28
Y	US 5 448 625 (Lederman) See column 3 line 64-column 4 line 4	10,11 21,22,28

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.